

Calderbank 19-6-42

IN THE CLAIMS:

1 - 2. (Canceled)

3. (Previously Presented) A transmitter comprising:

a demultiplexer responsive to an applied input signal for developing L signal streams, and

L channel coding/space-time coding transmitters, each responsive to a different signal stream of said plurality of signal streams, and each carrying out channel coding followed by space-time coding, said channel coding/space-time coding transmitters developing rates $R_i, i=1,2,\dots,L$, that are not identical to each other.

4. (Previously Presented) The transmitter of claim 3 where each of said channel coding/space-time coding transmitters comprises:

a channel coding encoder of rate R_i ,
a space-time encoder responsive to output signal of said channel coding encoder,
a mapper and pulse shaping circuitry responsive to said space-time encoder, and
at least two antennas for transmitting a space-time coded signal created by said
space-time encoder mapped by said mapper, and conditioned by said pulse shaping
circuitry.

5. (Canceled).

**6. (Previously Presented) The transmitter of claim 4 where said rates R_i ,
 $i=1,2,\dots,L$, are such that $R_1 > R_2 > \dots > R_L$**

**7. (Previously Presented) The transmitter of claim 4 where said channel coding
encoder performs trellis encoding.**

**8. (Previously Presented) The transmitter of claim 4 where said channel coding
encoder performs convolutional encoding.**

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9 - 14. (Canceled)

15. (Previously Presented) A transmitter comprising:

a demultiplexer responsive to an applied input signal for developing an L signal streams where L is at least two,

L channel coding encoders $i=1,2,\dots,L$, each responsive to a different one of said plurality of signal streams and developing codes at R_i , where the rates for different values of index i are not identical to each other, and

L a space-time coding transmitters, each responsive to a different one of said channel coding encoders.

16. (Previously Presented) The transmitter of claim 15 where each of said space-time coding transmitters comprises:

a space-time encoder responsive to input signal of said space-time coding transmitter,

a mapper and pulse shaping circuitry responsive to said space time-encoder, and at least two antennas for transmitting a space-time coded signal created by said space-time encoder, mapped by said mapper, and conditioned by said pulse shaping circuitry.

17. (Canceled)

18. (Previously Presented) The transmitter of claim 15 where said demultiplexer develops an L plurality of signal streams, where said channel coding encoders develop rates R_i $i=1,2,\dots,L$, that are such that $R_1 > R_2 > \dots > R_L$.

19. (Previously Presented) The transmitter of claim 15 where said demultiplexer develops an L plurality of signal streams, where said channel coding encoders develop rates R_i $i=1,2,\dots,L$, that are such that $R_1 < R_2 < \dots < R_L$.

20. (Previously Presented) The transmitter of claim 15 where said channel

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coding encoder performs trellis encoding or convolutional encoding.